

REMARKS

Claims 1-5 and 32-46 were presented for examination. The Examiner has rejected claims 1-5 and 32-46 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent Number 6,665,666 to Brown et al. (hereafter “the ’666 patent”) in view of U.S. Patent Number 5,477,451 to Brown et al. (hereafter, “the ’451 patent”). Claims 1, 35, 37, and 45 have been amended. No claims have been added. No new matter has been added. Claims 1, 35, 37, and 45 are independent.

Rejection of Claims Under 35 U.S.C. §103

Claims 1-5 and 32-46 were rejected under 35 U.S.C. §103(a) as unpatentable over the ’666 patent in view of the ’451 patent. Independent claims 1, 35, 37, and 45, as proposed to be amended recite, in relevant part, the following steps:

- generating an analyzed question including a first identification of a syntactic category assigned to a portion of the parsed question;
- identifying at least one predetermined question pattern including a second identification of a syntactic category matching the first identification of a syntactic category;
- transforming the one or more identified question patterns into one or more partially unspecified statements, said transforming including matching each of the identified question patterns to a set of predetermined transformations corresponding to said one or more partially unspecified statements

The ’666 patent fails to teach or suggest generating an analyzed question including a first identification of a syntactic category assigned to a portion of the parsed question. The ’666 patent describes replacing portions of a query with “QA Tokens”, defined as abstractions of phrases or question types. *See* the ’666 patent, col. 3, lines 52-53. The focus of the ’666 patent is on replacing portions of a query with a label identifying an abstraction of the concept expressed by a portion of a query – for example, replacing the word “where” with the label “Place” or replacing “July 4 ,1776” with “Date”. *See, e.g.,* the ’666 patent, col. 5, lines 15-25.

In contrast, an analysis of a query in the claimed invention results in the generation of an analyzed query that expresses syntactic categories of the phrases in the query. As indicated in previous Responses, an example of this analysis is given on Page 12 of the specification. In this example, a question analyzer parses the words in the question “Who did the boy see?” to generate the analyzed question: (*WH Who) (*AUX did) (*NP (*DET the) (*N boy)) (*V see)? An analysis of this query by the system described in the ’666 patent might result instead in a sentence such as: @SYN(PERSON\$, ROLE\$, ORGANIZATION\$, NAME\$) did the boy see. The ’666 patent, therefore, describes analyzing the meaning of a word, regardless of the word’s relationship to other words in the query, and identifying a concept expressed by the word, but fails to describe, teach or suggest analyzing the syntax or morphology of the query as a whole or replacing a portion of the query with an identification of a syntactic category associated with the portion of the query. Similarly, since the ’666 patent does not describe syntactic analysis of queries, it also fails to disclose, teach or suggest identifying at least one question pattern including at least one syntactic category that matches a syntactic category identified within an analyzed question.

Nor does the ’666 patent teach or suggest transforming one or more identified question patterns into one or more partially unspecified statements, the transforming including matching each of the identified question patterns to a set of predetermined transformations corresponding to the one or more partially unspecified statements. The ’666 patent describes matching a query to a template to replace a word pattern in the query with a QA token. *See* the ’666 patent, col. 3, lines 56-62. As described above, the QA tokens are abstractions of phrases or question types and do not identify syntactic or morphological categories. In contrast, the claimed invention describes a statement generator identifying a set of predetermined transformation to apply to a

question pattern to convert the question pattern into a partially unspecified statement, which is expressed in terms of syntactic and/or morphological categories, has a structure corresponding to an answer to the question and includes an identification of information required to answer the question. The '666 patent fails to describe, teach or suggest performing transformations on question patterns associated with an analyzed query or converting such a question pattern into a partially unspecified statement expressed in terms of syntactic or morphological categories.

The Examiner admits that the '666 patent does not teach a partially unspecified statement missing a portion corresponding to an answer or a predetermined transformation describing syntactic variations of terms in the question. The Examiner relies on the '451 patent to cure the deficiencies of the '666 patent. However, the '451 patent also fails to teach or suggest identifying a set of predetermined transformation to apply to a question pattern to convert the question pattern into a partially unspecified statement, which is expressed in terms of syntactic and/or morphological categories, has a structure corresponding to an answer to the question and includes an identification of information required to answer the question.

As indicated in previous responses, the '451 patent is directed to a method and system for natural language translation, that is, merely a system for translating text from one language such as French to another language such as English. Text translation from one language to another is clearly a non-analogous art with respect to a system for answering questions the answers to which are imbedded in text. Notwithstanding this observation concerning non-analogous art, the '451 patent fails to teach or suggest identifying a set of predetermined transformation to apply to a question pattern to convert the question pattern into a partially unspecified statement, which is expressed in terms of syntactic and/or morphological categories, has a structure corresponding to an answer to the question and includes an identification of information required to answer the

question. In the '451 patent, a word pattern is translated from a source language into an intermediate representation including word and part-of-speech sequences, and from the intermediate representation into a target language. Thus, “Why do not you ever succeed?” is first transduced into “RRQ VD0 XX PPY RR VV0 QINV” and then into the French (or other target language) for “Why do not you ever succeed?”. The '451 patent does not describe translating an analyzed query into a question pattern, which is then converted into a partially unspecified statement, which is then converted into a partially unspecified query, which is then used to identify an answer to a question— the system in the '451 patent merely translates the question, it does not describe how to answer the question. A system for verbatim translating of a statement from one language into another does not teach or suggest the use of an analyzed query to provide an answer to a question.

Nor would one of ordinary skill in the art be motivated to combine a system for translating a statement from a source language into a target language (as described in the '451 patent) with a system for replacing phrases in queries with abstractions of the concepts expressed by the phrases (as described in the '666 patent). As indicated above, the '666 patent describes identifying an abstract concept (for example, identifying the concept of “date” from the phrase “when” or the concept of “place” from the phrase “where”). One of ordinary skill would not be motivated to apply a system for directly translating a phrase to the '666 patent because this would not improve the system’s ability to identify a response to a question – for example, the ability to translate “when” from Spanish into French would not improve a system seeking to identify what kind of question the word “when” represents.

Accordingly, Applicant respectfully submits that the '666 patent and the '451 patent, either alone or in combination, do not teach or suggest each and every limitation of independent

claims 1, 35, 37, and 45. Applicants respectfully request that the Examiner reconsider and withdraw the rejection of independent claims 1, 35, 37, and 45, and dependent claims 2-5, 32-34, 36, 38-44, and 46.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,
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